NETWORK HEALTH DIGEST

NHD CPD eArticle

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UNDERNUTRITION

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I wrote on overnutrition in *NHD* a few months ago[1a] and its impact on public health. In this piece, I will flip the focus onto what is less prevalent in the UK, but remains a pressing issue, undernutrition – that is, clinically having a BMI under 20kg/m², allowing for other factors such as age and morbidity.

Whilst the most recent data from the World Bank shows that only 3% of the population are undernourished,[1b] it still poses a public health issue affecting roughly 1.9 million people and costing around 19.6 billion pounds to the NHS in 2012,[2] despite the fact that most of us in the developed world are lucky enough to have an abundance of food at our fingertips. Undernutrition is of particular concern in hospital patients, the elderly and those who live with certain eating disorders, namely anorexia nervosa; the eating disorder with the most strikingly elevated mortality risk.

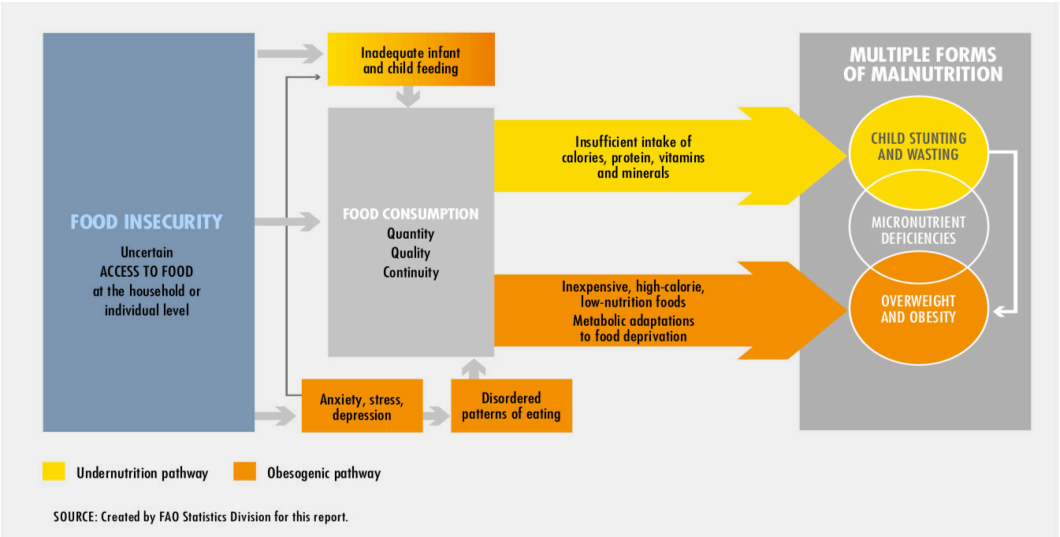
CONTEXTUALISING UNDERNUTRITION IN THE DEVELOPED WORLD

When we think about hunger and starvation, the picture in our heads is likely to be set in a village in an African country, or amongst rubble and chaos in the Middle East. In developing countries, the reasons for undernutrition widely differ to the problems we have in the UK: war, civil unrest, famine, and extreme poverty are all factors to consider. The ongoing Yemeni humanitarian crisis, often too difficult to fathom for anyone living comparatively idyllic existences in the UK, has yielded countless situations of chaos and desperation. One video account documents a young girl grinding up boiled leaves to be made into a paste, as her family's only source of nutrition.[4] Elsewhere, we see communities subsisting on cooked mud, because sacks of rice are too expensive.

The 2019 report from the Food and Agriculture Organisation of the United Nations (FAO) entitled *The State of Food Security and Nutrition in the World*, shows that, '820 million are undernourished, with undernourishment linked to economic downturn and instability'.[5]

Without a doubt, austerity, poverty and homelessness are issues in the UK that have worsened in the last decade, but our reasons for undernutrition differ in that they are rooted in deeper

Figure 1: Pathways from inadequate food access to multiple forms of malnutrition[3]



socioeconomic issues, such as neglect of the elderly, inadequate pension provisions and the hospital carousel amongst the elderly whereby admissions to hospital are an endless cycle. Furthermore, other instances of undernutrition tend to be caused by the anorexia nervosa eating disorder. Moreover, due to undernutrition being less prevalent than overnutrition as far as the UK is concerned, cases of it often get overlooked.

UNDERNUTRITION IN THE ELDERLY

Undernutrition in the elderly is becoming an increasingly prevalent issue due to our ageing population. The major causes are 'anorexia, cachexia, sarcopenia, dehydration, malabsorption and hypermetabolism'.[6] Frailty is another consideration, characterised by at least three of the following criteria:

- weight loss (>5kg per year)
- self-reported exhaustion, weakness (fall in hand grip strength)
- slow walking speed
- low physical activity

It is challenging to identify those at risk due to the difficulty of reaching and screening those who are most at risk, the lack of homogeneity of screening mechanisms and lack of consensus on what constitutes a malnourished individual.[7]

The effects of ageing present many obstacles for older individuals obtaining adequate nutrition. This list is extensive and includes:

- swallowing problems due to previous morbidity or stroke;
- decreased dental capacity due to dentures or periodontal disease;
- frail skin; peripheral vascular disease; arthritis;
- decreased capacity for use of hands;
- malabsorption of nutrition;
- diminished sensory capacity including taste changes and reduced appetite; and also more generally:
- the effects of chronic disease and disability.

Socio-economically, austerity measures have disadvantaged retired pensioners, resulting in lower living allowances for food. Furthermore, loneliness in an ageing population, many of

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whom may be living by themselves, can result in a lower inclination to eat, due to the removal of the important social aspect of eating, ie, sharing breakfasts, dinners, a cup of tea and biscuits, etc (termed 'social facilitation').[8]

HOSPITAL ADMISSIONS

Perhaps the first time malnutrition in hospitals was considered in earnest, was with the publication of The King's Fund report in 1992, which revealed that 66% of hospital patients were malnourished.[9]

Acute malnutrition can occur in individuals who have had sudden or short-term onset of disease. Morbidity prevents the individuals affected from accessing and enjoying food, so that patients admitted to hospital due to their morbidities are often malnourished upon their admission (thought to be between 25-40%).[9] To make matters worse, during a hospital stay, patients have a tendency to eat poorly, regardless of whether their eating patterns have or have not already been affected by their illness, and it is thought that around 40% of hospital food is wasted,[10] leading to patients only receiving 70% of their daily energy requirements.[9]

It is unsurprising then, that following the hospital stay, patients tend to return home undernourished, which affects their recovery, plus, the likelihood that they will be readmitted to hospital increases – and so begins the 'undernutrition carousel'. Up to 70% of patients discharged from hospital weigh less than on admission.

Practical reasons for poor food intake during hospital stays include:

- lack of staff to monitor and feed patients;
- poor environment for eating (ie, noisy ward, inappropriate meal times);
- lack of, or poor quality of snacks;
- unappetising food;
- food not prepared with patient in mind (ie' choking risk, food that requires cutting).

Culturally, patients may receive food that they are not used to eating, or they may miss food they eat at home. Bulk food trolleys by patient beds seem to work best, as opposed to set mealtime provisions, yet are not always provided, whether this be down to convenience, cost or other factors.

EATING DISORDERS

Eating disorders are fairly rare in the general population; however, they are relatively common amongst young women.[11] The overall incidence rate for anorexia nervosa has remained constant, but there has been an increase in prevalence amongst teenage girls and young women aged 15-19, who are seen as a high-risk group.[11]

It goes without saying that anorexia nervosa is the eating disorder with the greatest outwardly apparent expression of undernutrition. Moreover, there are misperceptions and stigmas

attached to anorexia nervosa which do not help rationalise fully the complexity of the condition, and traditional approaches to encouraging food intake may not work, due to anorexia nervosa being a mental health condition.

THE FUTURE OF MALNUTRITION IN THE UK?

With an uncertain political climate affecting poverty and food security in the UK, as well as the already overstretched resources of the NHS, exacerbated by the clearly ageing population, all available evidence suggests that malnutrition in the UK is not a problem that can be brushed under the carpet. Public health initiatives are shifting to community approaches and community-led interventions,[12] to maintain the nutritional needs of all members of the community, especially those who are at a higher risk.

Awareness of malnutrition in the developed world is increasing too; we had the first ever UK Malnutrition Awareness Week held in October 2018. The second will run from 14th October to 20th October this year, administered by BAPEN and the Malnutrition Task Force. Find out how you can get involved on BAPEN's website: www.bapen.org.uk/malnutrition-undernutrition/combating-malnutrition/malnutrition-awareness-week.

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Questions relating to: *Undernutrition* *Type your answers below, download and save or print for your records, or print and complete by hand.*	
Q.1	Outline the reasons behind undernourishment in the UK, referencing the FAO's 2019 report in your answer.
A	
Q.2	What are the major causes of undernutrition in the elderly?
A	
Q.3	How is frailty in the elderly determined?
A	
Q.4	Explain why identifying those at risk of malnourishment is so challenging.
A	
Q.5	What role does morbidity play in furthering the risk of undernutrition once a patient is in hospital?
A	
Q.6	What measures could be taken to increase food intake during a hospital stay?
A	
Q.7	Why are traditional approaches to encouraging food intake in those with eating disorders a challenge?
A	
Q.8	Differentiate between the undernutrition and obesogenic pathways to malnutrition.
A	
Please type additional notes here . . .	